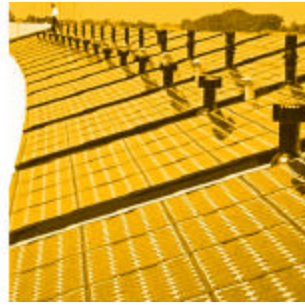


# Promoting Renewable Energy



Renewable Going Forward:  
The Fundamentals, the Hurdles,  
and the Opportunities



# — Overview of Presentation

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- Market fundamentals of renewables are strong...but development lags.

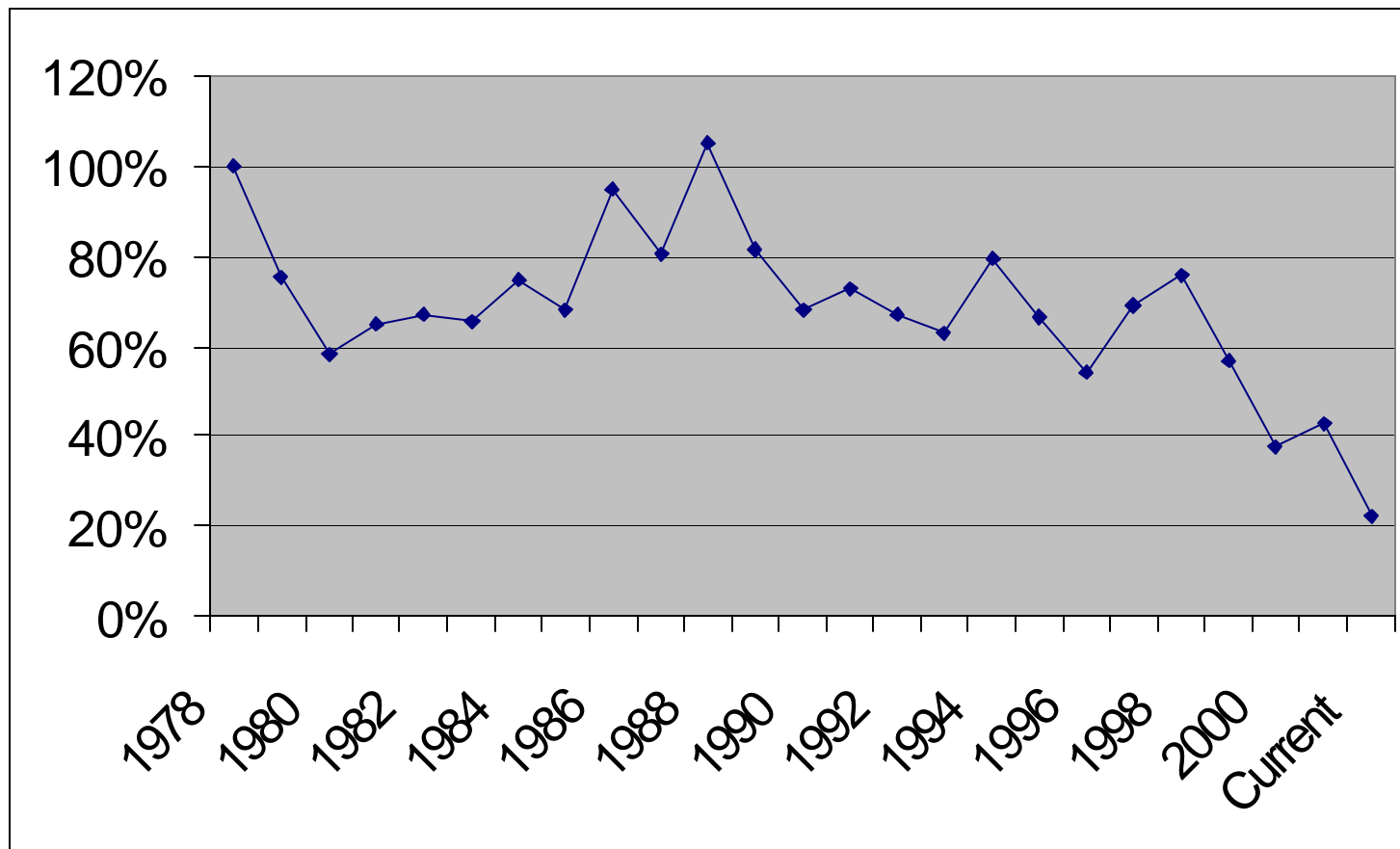
A successful framework for renewable development must reduce uncertainty and risk.

United States a quagmire of multi-faceted agendas.

Federal and state agendas must be harmonized.



# Market Fundamentals: Ratio of Interest Rates and Fossil Prices Shows Cost Advantage of Renewables



George Sterzinger, Renewable Energy Policy Project



# Market Fundamentals: EIA Analysis — of US With 10% RPS

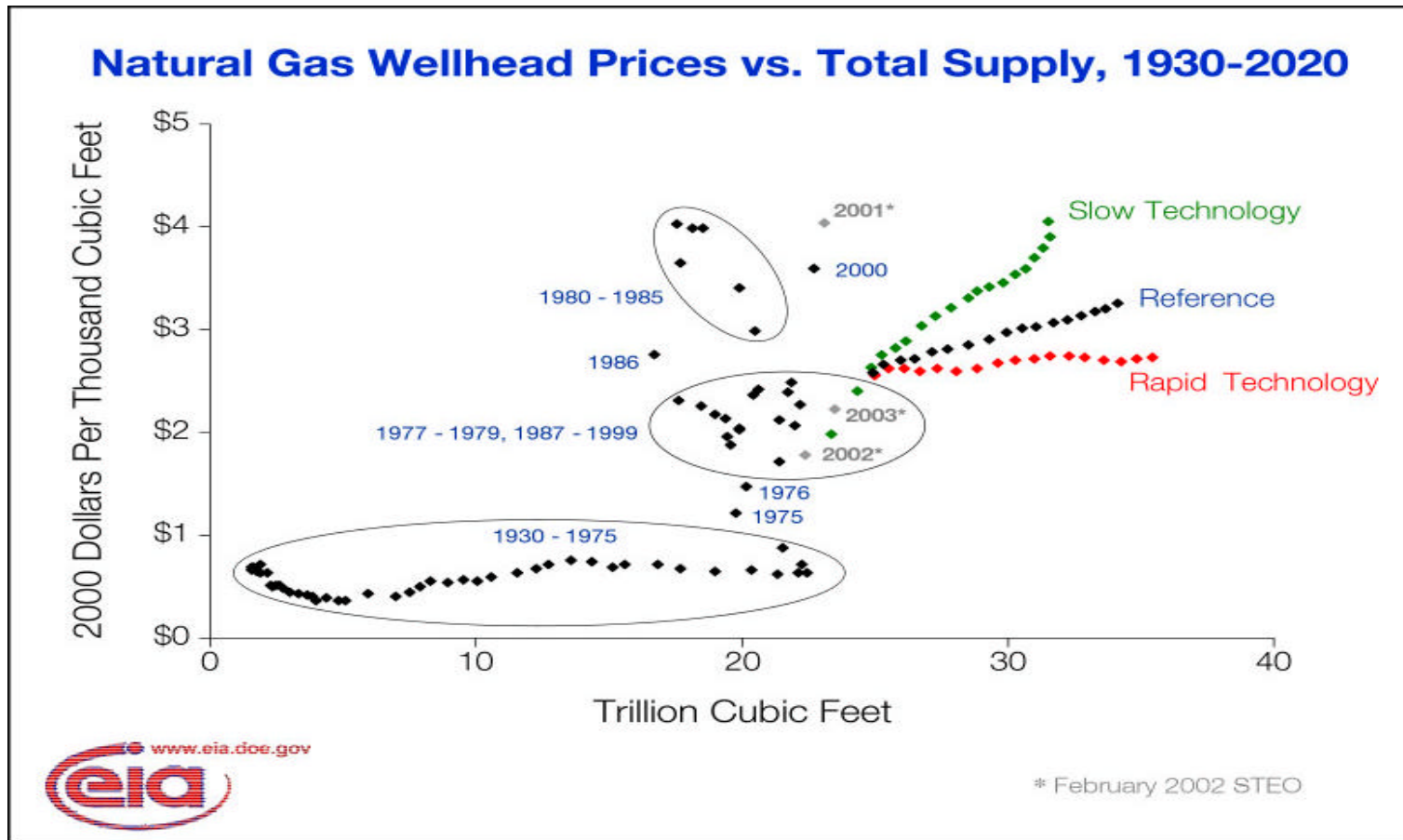
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- Wind, geothermal, and biomass will be the greatest contributors.
  - ✍ Wind generation will grow from 2.3 billion kWh to 51.8.
  - ✍ Geothermal from 2.8 to 7.4.
  - ✍ Biomass from 6.6 to 10.6.

The RPS will moderate gas prices and lead to lower energy bills, saving \$15 billion.



# — Natural Gas 1930 - 2020



George Sterzinger, Renewable Energy Policy Project



## — Barriers

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- Natural gas price risk is shifted onto end users.  
The advantage to renewables is not reflected in market.

Regulatory policies on transmission interconnection, capacity credit and reserve requirements harm renewables.

Trend towards merchant plant financing stops renewable financing and project development.

General uncertainty paralyses development.

## — Opportunities

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- Renewable energy offers benefits in:
  - energy security,
  - affordability,
  - economic development and
  - environmental responsibility.



# Framework: Government and Private — Interests

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- In the broadest sense, renewable development requires that:
  - ✍ Overall goal is clearly set by government;
  - ✍ A policy framework is adopted that allows market activity; and
  - ✍ Private interests respond to the framework incentives.



## — Framework: Renewable Hurdles

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- Initial cost of technology.  
Infrastructure to support development.  
Financing to reduce the impact of capital costs.  
Incentives to align private and public interests.

## — United States Multifaceted Agenda

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- Energy policy in the US emerges from state and federal actions.

States are focused on deregulation reevaluation with some pioneers pushing energy environmental integration.

Federal action is split along party lines.



## — Federal Agenda: Legislation

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### — Proposed Legislation:

- ✍ Four or three pollutant bill.
- ✍ Production Tax Credits.
- ✍ Renewable Portfolio Standard of 10 or 20%.
- ✍ Omnibus Energy and Agriculture Bill.
- ✍ Senate versus House Energy Bills.

# Opportunities: Economic

## — Development

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- The 10% RPS will create an \$80 billion domestic market for renewable development.

That market will be diversified among many states and regions.

REPP is developing a jobs calculator to determine the jobs per MW by skill level.

Economic benefits must be identified and captured to translate into support for renewables.



# Opportunities: Federal and State

## — Harmonization

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- States are likely to be the early adapters and pioneers in pursuing renewable development.

Federal programs should support and encourage aggressive state actions.

At a minimum, existing federal supports should be catalogued.

If possible, new supports for training, enterprise development, and poverty alleviation should be tied to state renewable actions.

# Opportunities: State and Local — Actions

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- Renewable Portfolio Standards.
- Tax Exempt Bond Funds.
- Local Development Initiatives.
- Transmission Access and Siting.
- Emerging Clean Energy Plans.



## — Opportunities: Federal Actions

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- Job Training to Address Skills Gaps.  
Production Tax Credits.  
R&D Transfer to State Development Incubators.  
Community Development Finance Targets for  
Renewable Development.



# Opportunities: Competition and — Convergence

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- Technology breakthroughs spread quickly, e.g. off-shore wind.

Policy developments can also spread, e.g. Renewable Portfolio Standard.

Convergence will require links to carry positive message.





## — Opportunities: Climate Change

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- The discounted future cost of climate change compliance is a critical factor determining future progress.

Every household, municipality, corporation, state, and country that adopts early actions lowers this discounted future cost, making US compliance more likely.